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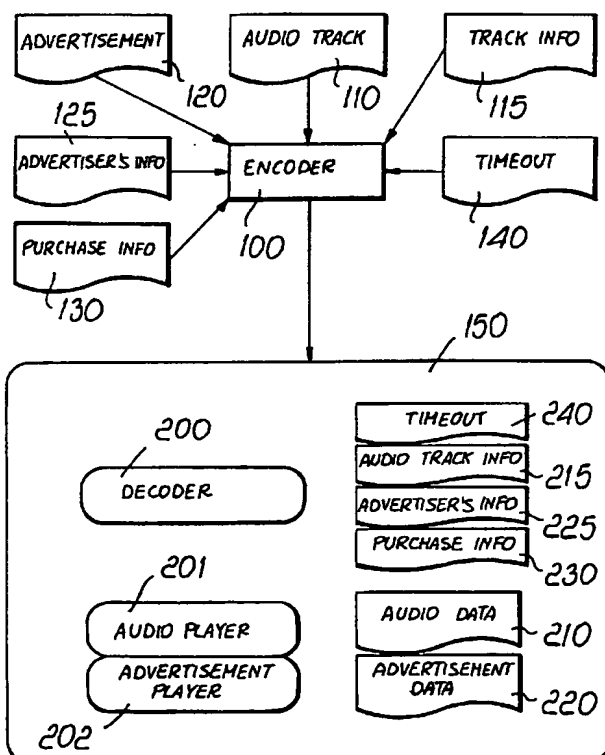
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(54) Title: METHOD AND SYSTEM FOR THE DISSEMINATION OF AUDIO TRACKS THROUGH COMPUTER NETWORKS



(57) Abstract: A method of providing music files from a computer network, comprising the steps of: selecting an audio track from a first archive; (110) selecting advertising information from a second archive; (120) providing an audio player; (210) encoding said audio track, said advertising information and said audio player into a software executable file.



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## METHOD AND SYSTEM FOR THE DISSEMINATION OF AUDIO TRACKS THROUGH COMPUTER NETWORKS

### Technical Field

The present invention relates to a method and a system for the dissemination of audio tracks through computer networks and personal computers in general, providing means for encoding and decoding music data and advertising information.

### Background Art

Nowadays, several forms of commercial tools and methodologies are employed for advertising over computer networks, particularly over the Internet, which, thanks to its millions of users, is to be seen as one of the most attractive and effective markets. On the other hand, the turnover and the competition involved in the music market continuously demands for new methods and systems for promoting songs and albums and, at the same time, protecting the owner's rights on the author's copyrighted product. So far, the promotion and dissemination of music songs has mainly been carried out through radio and television channels in a variety of programs. In this way, the copyrighted material gets to the user completely free of charge, the costs of promotion being sustained by sponsors or advertisers. In recent years, the fast growing of the Internet and new technologies used for the encoding of music files on computer media have taken the attention of millions of users. In fact, it is now possible to encode any music track into an audio file in several formats and play it on a normal personal computer. Moreover, the Internet makes it very handy to browse through a very large amount of music repositories available world-wide, looking for specific titles and eventually downloading the desired music track: recent surveys have proven that the most searched term in the Internet is the word "MP3", which refers to audio files encoded in a well known compressed format. To hear an MP3 audio file, the user requires an MP3 audio player. MP3 audio players can be provided in the form of a hardware apparatus, or most usually, of a software

application running on the user's personal computer. Many MP3 audio players are provided free of charge, as are many MP3 audio files. The quality of MP3 files is very high, not far from that of a normal CD. Furthermore, MP3 are much smaller in size than their CD counterparts, approximately in a 1 to 12 ratio, which makes them suitable for downloading from a computer network, particularly the Internet. Obviously, web sites cannot legally supply MP3 files of copyrighted material, unless authorised by the author or the owner. Therefore, the user is usually forced to pay a fee to some Internet service provider in order to gain access to a music repository and download new audio tracks or copyrighted material.

On the contrary, it is highly desirable to provide a computer network system for the free dissemination of copyrighted audio material, allowing users to download any kind of audio data they desire and, at the same time, preserving the owner's rights.

On the other hand, it is desirable for singers and music makers and distributors to exploit the Internet network to reach the maximum possible amount of users. Campaigns to launch a new album or music product, for instance, would be much more effective on the Internet if the risks of illegal copying of songs is overcome.

#### Disclosure of the invention

The aim of the present invention is to provide a method and a system for the dissemination of music, including copyrighted material, over a computer network, particularly the Internet, which would be also suitable for personal computers in general.

Within this aim, an object of the present invention is to provide a method and system that allow a user to download copyrighted audio tracks without infringing the law, and to play them in an easy and user-friendly way without the need of an external music player or ancillary means.

Another object of the present invention is to provide a method and a system that allow music authors and makers to approach the largest possible

amount of users.

Another object of the present invention is to provide a method and system that ensure the advertiser or sponsor that the advertising information is actually watched or heard by the user, so as to guarantee a return on the investment made.

This aim, these objects and others which will become apparent hereinafter are achieved by a method for the dissemination of music on personal computers, comprising the steps of selecting an audio track from a first archive, selecting advertising information from a second archive and providing an audio player, characterised in that the audio track, the advertising information and the audio player are encoded into a software executable file.

Advantageously, data encoding does not allow to detach the audio data from the file.

Conveniently, the audio track can be a WAV file, an MP3 file, a MIDI file or a proprietary file.

Advantageously, timeout information in the form of an expiry date or a maximum number of executions can be embedded in the executable file.

Advantageously, further advertiser's information and track information can be embedded in the executable file as a link to a web-site or as a stand-alone window, together with purchase information.

#### Brief Description of the Drawings

Further characteristics and advantages of the present invention will become apparent from the following detailed description, given by way of a non limitative example and illustrated in the accompanying figures, wherein:

Figure 1 is a schematic view showing means for encoding files according to the present invention;

Figure 2 is a schematic view showing means for decoding and playing files according to the present invention;

Figure 3 is a schematic view of a graphical interface through which a user

can control means for decoding and playing files according to the present invention;

Figure 4 is a schematic view of a client-server network system used by user to download from the network files encoded in accordance with the present invention;

Figure 5 is a schematic view of a user's computer station according to the present invention.

#### Ways of carrying out the Invention

Figure 4 shows an overall view of a preferred embodiment of the system architecture, wherein a user computer station 10 gains access, by means of a telephone terminal 20 and through an access provider 30, like an Internet access provider, to a network 40, for example the Internet, and to a server 50 of a service provider, which is in turn connected to the network 40. The server 50 of the service provider contains means 60 for encoding data taken from archives 70 or from other servers 80 connected to the network 40 and for generating an executable file 150, as detailed in Figure 1. Said executable file comprises means 200 for decoding and playing the encoded audio file and all the additional embedded information, according to the flow-chart of Figure 2, also providing the user with a graphical interface 300 schematically shown in Figure 3.

Figure 5 shows a user computer station 10, which preferably comprises a personal computer provided with a monitor 511, a keyboard 512, a hard disk or other mass storage devices 513, a pointing device 514 and sound equipment 515, including a sound card and speakers. Computer station 10 further comprises a modem 20 or other communicating devices, like an ISDN adapter. Alternatively, the computer station is provided with a card for network connections and is connected to a proxy server through a local network connection, which proxy server is in turn connected, either permanently or temporarily, to a network access provider, like an Internet access provider, through an external line.

The operation of the system is as follows.

A user's station 10 uses his modem 20 or any other equivalent means, like, for instance, a LAN connection, to connect to the Internet 40 through an Internet Access Provider 30, and is so able to communicate with a Service Provider 50. The Service Provider 50 supplies a graphical interface in the form, for example, of a web-site, to the connected user. Through the graphical interface, the user is able to browse a list of audio tracks that are available for downloading, and sends a request for the desired title or audio track 110.

10 The Service Provider 50 is provided with means to detect the physical location in which the audio track 110 is located, which can be either an archive 70 managed by the server or any other suitable repository, for instance a different Internet site managed by a music partner 80, and retrieves the requested audio track file 110. At the same time, means for selecting advertisement information select advertisement data 120 to be added to the audio track 110, together with optional timeout information 140, advertiser's information 125, track information 115 and purchase information 130.

Encoder 100 encodes all selected data into a single software executable file 150, turning source information 110, 115, 120, 125, 139, 140 into an appropriate digital representation in the form of audio track data 210, audio track information data 215, advertisement data 220, advertiser's information data 225, purchase data 230 and timeout data 240. In the same file, encoder 100 embeds means 201 for playing the encoded audio track data 240 and means 202 for displaying, if present, graphical advertisement data 220. The advertisement information 120 can be in the form of sound data 220 encoded in such a way that it partially overlaps the audio data 210 when the music is played as it normally happens with radio programs, graphical data to be played or displayed when the file 150 is launched or a mixture of the two.

30 Encoder 100 encodes or encrypts data in such a way that the audio track data

210 cannot be detached by the encoded file 150 and played separately in traditional audio players, thus preventing that the user may play the song without receiving the advertisement message 120. Before encoding and encryption take place, the audio track 110 is a digital data file in any known format, like, for instance, MP3, WAV or MIDI, or is already encoded in  
5 some proprietary format. The audio data 110 is then treated by encoder 100 and converted into a different format 210. Either encoding and encryption can be performed by using any appropriate encoding or encryption algorithm, widely known in computer literature.

10 In a different embodiment of the present invention, the user is requested to register by the Internet Service Provider 50 on the first time that the service is accessed, and to optionally include some data regarding his interests and hobbies. This information may be effectively used by the means for selecting advertisements to select an advertisement 120 that best  
15 suits the user's interests. In this case, when downloading of a music file is requested, the service provider 50 checks the user identification to determine whether the user is comprised in a list of registered users and, if so, determines a category to which the user belongs. Accordingly, the service provider 50 ascribes one or more advertisement groups to the user, and then  
20 selects an advertisement matching the user's profile, for example by comparing information optionally provided by the user about his age, family status, interests or hobbies and stored in a database of the service provider 50.

Referring now to Figure 2, once the user has completed the downloading  
25 of the executable file 150 encoded by encoder 100, he is able to start it as it would start any software application. At start-up, decoder 200 checks the timeout data 240, which can be an expiry date or a threshold number limiting the maximum number of executions. In the latter case a counter is increased and saved on mass storage means 513 each time the file 150 is  
30 launched. Should the time limits be expired, decoder 200 displays a message



to inform the user that the audio track 210 can no longer be played, which message may also include advertiser's information 125-225, track information 115-215 or purchase information 130-230. On the contrary, if the pre-set time limits are not exceeded, decoder 200 starts audio player 201 and advertisement player 202. The former is in charge of playing the audio data 210 contained within the file 150 which can thus be heard through the sound equipment 515, the latter displays advertisement information 220 provided by the advertiser that is sponsoring the file on the user's monitor screen 511. The advertisement player 202 preferably displays the advertisement information in a portion 301 of a window 300 that the user can not hide behind other windows or minimise unless the audio track has been paused or stopped, so that it is not possible to hear the music if the advertisement is not clearly visible on the monitor screen. This feature can be accomplished by exploiting certain features of modern operating systems, like the Microsoft Windows<sup>TM</sup> family, that provide the software engineer with a well known API (application programming interface) exporting functions that allow to set the window's attributes. The same result can be achieved by more complex and some times more effective techniques, for example by running in the background an application watchdog in charge of monitoring the status of the window displaying the advertisement information. Several different possibilities are also known to the skilled in the art. If no visual advertisement information has been made available by the advertiser, the user will hear an advertisement message encoded by encoder 100, overlaid to the music in one ore more places of the audio track that is being played. Decoder 200 also provides an interface 310, which allows the user to control sound parameters, like volume, balance, and so on, so affecting the output of audio player 201, and means for handling all additional information data 215, 225, 230 embedded in file 150. Said means appear to the user in the form of graphical objects 315 and can be operated through the keyboard 512 and/or the pointing device 514. Particularly, the

user can press a first button 315' to display information 215 about the track that is being played. This information may be in the form of a stand-alone window, data scrolling within an area 305-306 reserved within the graphical interface 300 itself or a link to a web-site. By pressing a second button 315''

5 the user can display information data 225 about the advertiser, which, again, can be in one of the aforementioned forms. Moreover, the graphical interface 300 can provide means for ordering a record related to the track that is being played, according to purchase information data 230. Said means could be in the form of a link to an e-commerce web site or as a stand alone window in

10 which the user can enter all necessary data to perform the purchase. Further to buying a physical record associated with the audio track, the user can buy the software audio file 110 which is encrypted and embedded within executable file 150. In this case, purchase data 130 include an identification code, generated by the server 50, which identifies the executable file 150

15 downloaded by the user. By means of graphical interface 300, the user can request to buy the audio track. He is then asked to enter his credit card number, or equivalent, and submit his request data to the server, which request data includes the identification code. The server sends back a conversion code, which is used by decoder 200 to save the encrypted audio

20 track 110-210 into a standard audio file like, for instance, an MP3 or a WAV file, which the user can freely play by any available audio file player.

Alternatively, the user can activate the saving of audio track data 110-210 by connecting to a web-site managed by service provider 50, entering a code belonging to the purchase info and his credit card number, and receive the

25 conversion code.

Once the track has been fully played, decoder 200 waits for input by the user, which may play again the audio track 210 or just keep on playing around with the graphical interface 300, to order a record associated with the audio track and display advertiser's or track information.

30 It has been shown that the present method and system fulfils the proposed

aim and objects. Clearly, several modifications will be apparent to and can be readily made by the skilled in the art without departing from the scope of the present invention. Therefore, the scope of the claims shall not be limited by the illustrations or the preferred embodiments given in the description in  
5 the form of examples, but rather the claims shall encompass all of the features of patentable novelty that reside in the present invention, including all the features that would be treated as equivalents by the skilled in the art. For example, it is clear that the present invention can be applied also for the dissemination of music files independently of the Internet. A financing  
10 sponsor, for example, may use the method according to the present invention to generate software executable files that may then be distributed through different channels, for example on Compact Discs attached to music or computer magazines or as an add-on to video-games or computer programs in general.

CLAIMS

1. A method of providing music files from a computer network, comprising the steps of:
- selecting an audio track from a first archive;
  - 5 selecting advertising information from a second archive;
  - providing an audio player;
  - encoding said audio track, said advertising information and said audio player into a software executable file.
- 10 2. The method according to claim 1, characterized in that said audio track is one of the following:
- a WAV file;
  - an MP3 file;
  - a MIDI file;
  - a proprietary file.
- 15 3. The method according to claim 1, further comprising the step of encoding display means for displaying said advertisement data in said executable file.
4. The method according to claim 3, further comprising the step of encoding timeout information in said executable file.
- 20 5. The method according to claim 4, further comprising the steps of:
- encoding advertiser's information in said executable file;
  - encoding information about said audio track in said executable file;
  - encoding means for viewing said advertiser's information;
  - providing means for viewing said audio track information.
- 25 6. The method according to claim 5, characterized in that said advertiser's information is a link to an advertiser's web-site.
7. The method according to claim 6, further comprising the step of providing means for buying a record associated with said audio track or said audio track in the form of a software file.
- 30 8. The method according to claim 7, characterized in that said means for

buying a record associated with said audio track or said audio track in the form of a software file is a link to an e-commerce web-site.

9. The method according to claims 7 or 8, further comprising the steps of:  
sending a first code to a server managed by a service provider;  
5 receiving a conversion code from said server;  
extracting, by said decoder, said audio track.

10. A data encoder for personal computers, comprising:  
means for selecting audio track data;  
means for selecting advertising information;  
10 means for encoding said audio track data and said advertising information into one executable software file.

11. The data encoder according to claim 10, characterized in that said audio track data is provided in one of the following formats:

- MP3;  
15 WAV;  
MIDI;  
proprietary.

12. The data encoder according to claim 11, further comprising:  
means for selecting timeout data;  
20 means for selecting information about said audio track;  
means for selecting information about an advertiser;  
means for selecting purchase information;

means for encoding a plurality of data selected from the group which comprises said timeout data, said information about said audio track, said  
25 information about said advertiser and said purchase information into said one executable software file.

13. The data encoder according to claim 11, characterized in that said means for selecting advertising information select advertisements matching a user's profile.

- 30 14. A data decoder for personal computers, comprising a plurality of data

processing means, selected from the group which comprises:

- means for decoding audio track data;
  - means for decoding advertising information;
  - means for playing said audio track data;
  - 5 means for playing or displaying said advertising information;
- characterised in that said plurality of data processing means are all part of a same executable software file.

15 15. The data decoder according to claim 14, characterized in that said means for displaying said advertising information display said advertising  
10 information in a monitor window which is always fully visible and cannot be hidden behind other windows or minimised except by pausing or stopping the audio track..

16. The data decoder according to claim 15, further comprising:
- means for checking timeout data;
  - 15 means for displaying information about said audio track;
  - means for displaying information about an advertiser;
  - means for displaying purchase information.

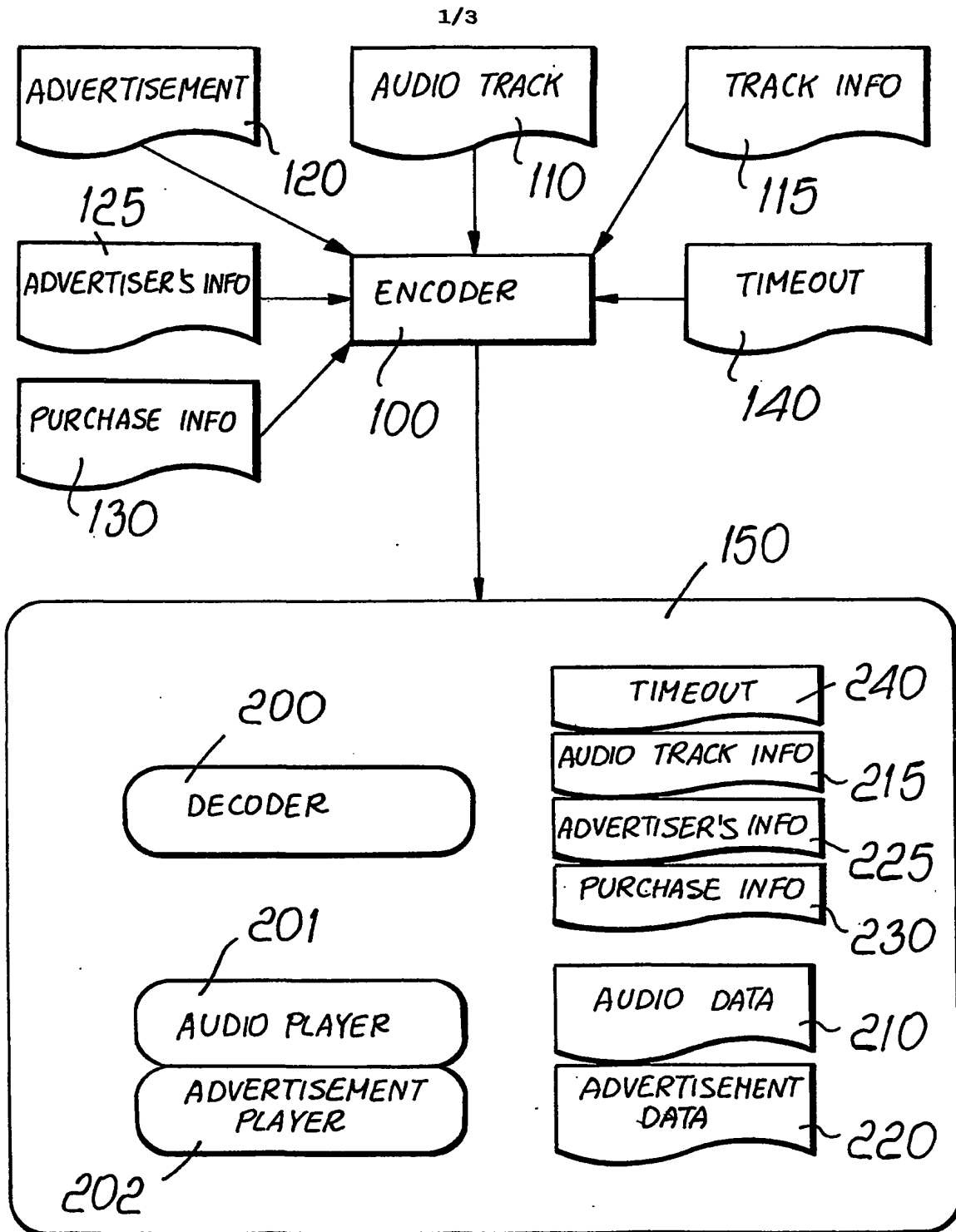
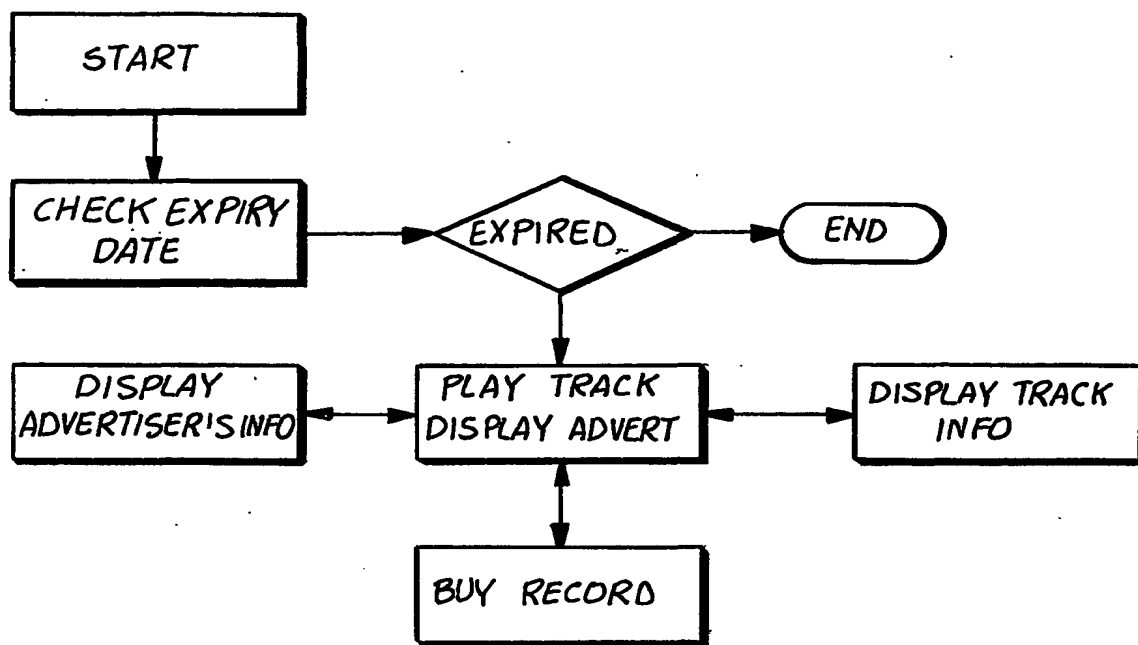
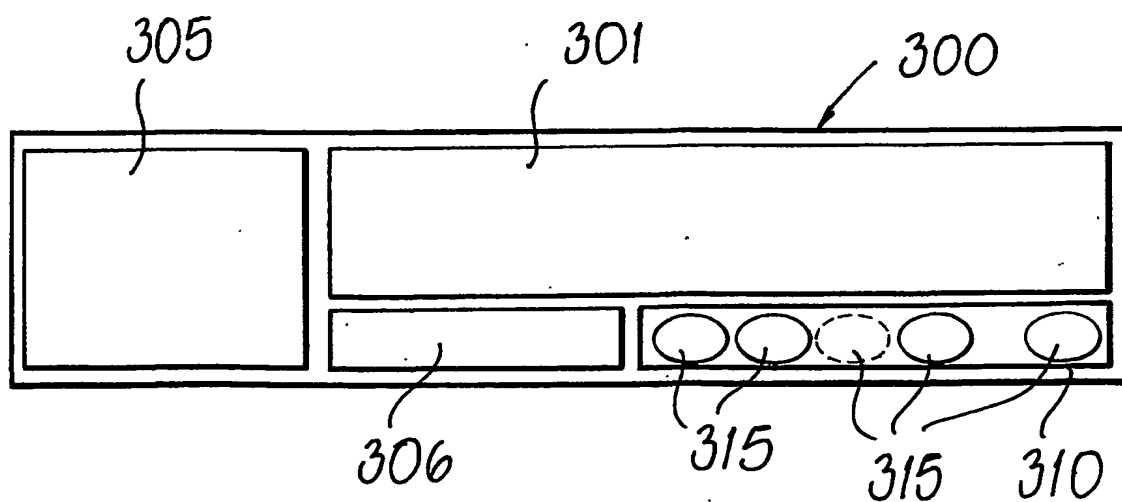


Fig. 1

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*Fig. 2**Fig. 3*



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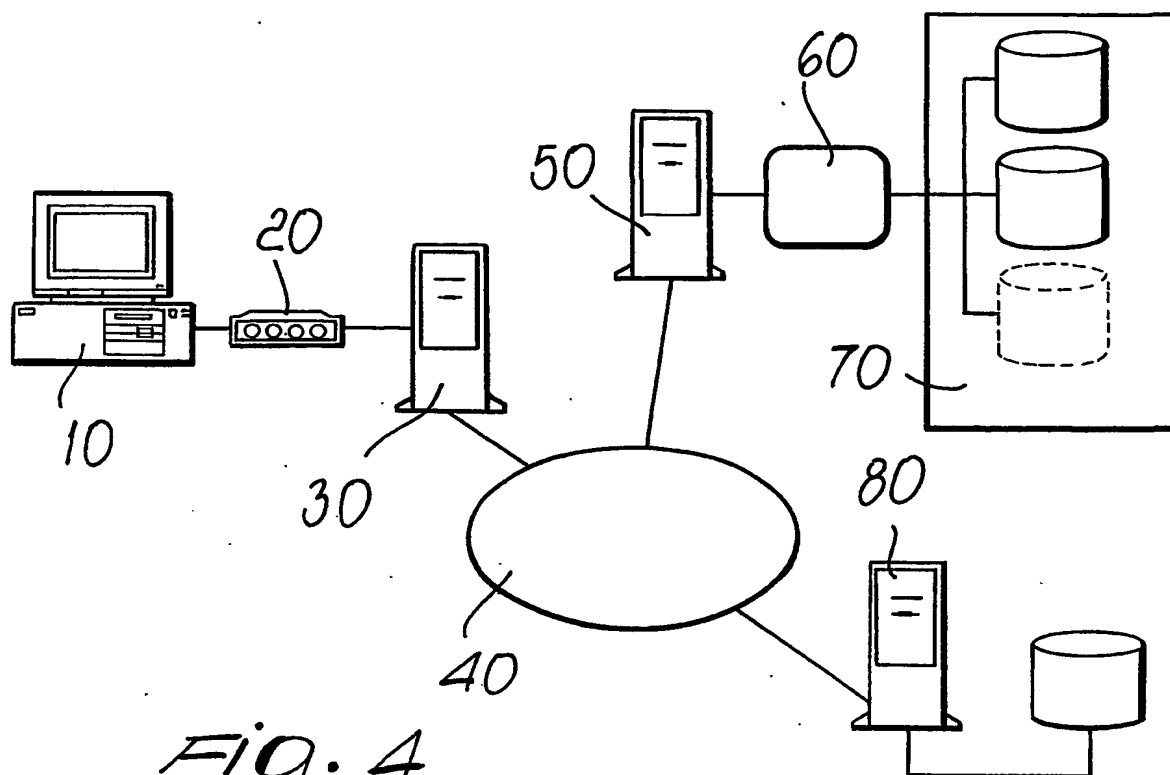


Fig. 4

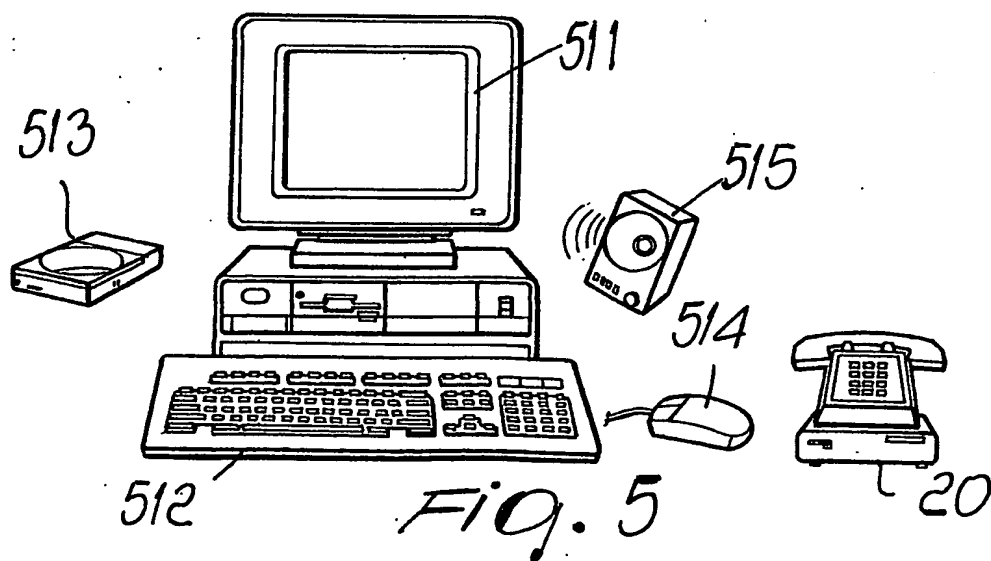


Fig. 5

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IT 00/00366

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G10H1/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G10H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

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- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
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Date of the actual completion of the international search

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Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

International Application No  
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
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